



PACIFIC FOREST TRUST

August 21, 2013

Assembly Member Anthony Rendon
Chair of the Water, Parks and Wildlife Committee

Assembly Member Franklin E. Bigelow,
Vice Chair of the Water, Parks and Wildlife Committee

Legislative Office Building
1020 N Street, Room 160
Sacramento, CA 95814

Dear Assembly Members Rendon and Bigelow, and members of the Assembly Water Bond Working Group:

As you continue your deliberations on a revised Water Bond for the state of California, the Pacific Forest Trust (PFT) wants to highlight the importance of strategic investments in watershed conservation to protect the source and security of our water supply.

Watershed conservation entails the protection and restoration of the natural infrastructure that initially collects, filters, regulates and transports the state's freshwater. Protecting these "ecosystem services" from degradation is a critical and cost effective investment, as without these initial filters and regulators in place, costs for water treatment and storage can increase.

While the conservation of all the state's watersheds is laudable, when it comes to water supply not all watersheds are created equal. The North Coast and Sacramento River hydrologic regions – which include the northern Sierra and Cascade mountain ranges – contribute approximately 75% of the state's total runoff each year. Climate change models predict that in the future an even greater proportion of the state's precipitation will fall in the north, as the southwestern US (including Southern California) continue to become warmer and drier. The water originating in these regions will become even more critical to the state's water supply, and making substantial investments in conserving these critical resources should be a top priority.

The importance of the watersheds in the Sacramento River region and the Sierra Nevada is reflected in the contribution they make to the urban and agricultural water supply of southern California. State data for 2005 shows that in that year deliveries

from northern California (via the Delta) constituted 33% of the water used for agriculture, urban consumption and wetland management in the South Coast, Tulare Lake and San Joaquin hydrologic regions. While the exact figure may change from year to year, it remains useful shorthand for the amount of water from the north that is required by the south.

Notably the overwhelming majority – over 80% – of the water flowing into the Delta comes from the Sacramento River. Conserving the critical upper watersheds and preventing further fragmentation and degradation will help maintain water quality and quantity flowing into the Delta, and is an important component of achieving ecologically sustainability.

PFT, the Department of Fish and Wildlife and other agencies have examined upper watershed areas in the Sacramento River region that are under particular threat from development and fragmentation. The upper watershed around Mt. Shasta – part of a larger area we refer to as the Klamath-Cascade – is identified by the state as a critical area requiring protection. As the drainage area for all of Shasta Lake's waters, the importance of this area to California's water system is obvious.

There are a number of ways that the funding for watershed conservation can be apportioned around the state, and we offer several possible approaches below for your consideration. In any event **the core principal should be that watershed investments be weighted toward the areas of the state that provide water supply to the majority of Californians.**

- 1) Allocate funding to each hydrologic region based on the percentage of statewide annual mean runoff occurring in that region.
- 2) Initially allocate funding to each hydrologic region based on population, and then subsequently distribute that funding to northern watersheds based on their contribution to agricultural and urban use. For example, the watersheds of the Sacramento River region would receive a share of the South Coast's allocation based on the amount of Sacramento River water consumed in the South Coast region.
- 3) Allocate half of the watershed conservation funds to each region based on population, and then allocate the remaining half to each region based on mean annual runoff.

For the purpose of these comments we have suggested apportioning funding by hydrologic region, as this is a reasonable way to consider the various regions of the state. When it comes time to distribute funds there should be a role for the various conservancies with regional expertise, as well as the statewide Wildlife Conservation Board. While we defer the specifics of who will administer the funds in various regions of the state to a future discussion, we encourage a process for coordinating investments as well as avoiding administrative redundancies.

Finally, we recommend that certain large projects that are a result of various legal settlements, most notably the Klamath Dam removal, the Salton Sea Quantification Settlement Agreement, and San Joaquin river restoration, be addressed independently from the watershed conservation work referred to above, with an additional and discrete appropriation. These important projects represent clear and existing state obligations and it is appropriate to provide them with a specific appropriation separate from the critical effort to protect our water security through watershed conservation.

Attached please find an addendum with relevant and informative excerpts from reports.

Thank you again for the opportunity to provide additional feedback on the proposed Water Bond.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul Mason", with a stylized, flowing script.

Paul Mason
VP, Policy & Incentives

Encl: Further documentation (4 pages)

References for PFT letter on the Water Bond

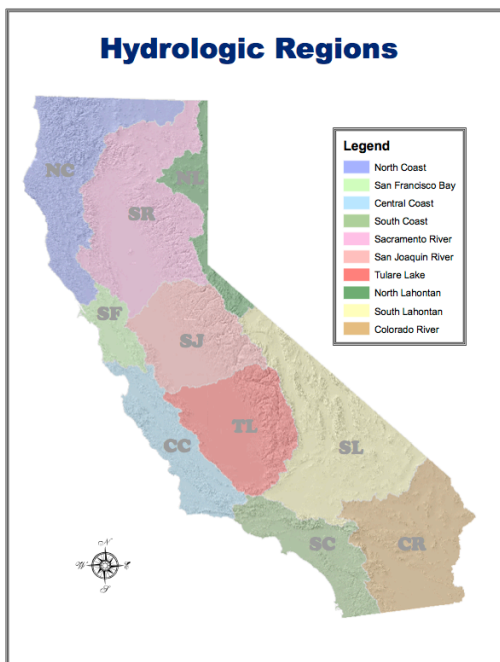
1) “The North Coast and Sacramento River hydrologic regions – which include the northern Sierra and Cascade mountain ranges – contribute approximately 75% of the state’s total runoff each year.”

The data to support this comes from DWR’s 2009 California Water Plan Update. The regional reports for the North Coast and Sacramento River hydrologic regions state the following:

“Heavy rainfall make [the North Coast] of the Coast Range the most water-abundant area of California. Mean annual runoff is about 29 million acre-feet, **which constitutes about 41 percent of the state’s total natural runoff**, the largest volume compared to all other hydrologic regions of California.” California Water Plan Update 2009: North Coast Regional Report, p. NC-10.

“The Sacramento River region is the main water supply source for much of California’s urban, agricultural, and environmental areas. Basin runoff averages 22.389 million acre-feet per year, **providing nearly one-third of the state’s total natural runoff**. Major supplies in the region are provided through surface storage reservoirs and through direct groundwater pumping.” California Water Plan Update 2009: Sacramento River Regional Report, p. SR-12-SR-13.

The map below, illustrating the location of California’s hydrologic regions, shows that the northern Sierra and Cascade mountain ranges straddle the border between the North Coast and Sacramento River regions.



2) "Climate change models predict that in the future an even greater proportion of the state's precipitation falling in the north, as the southwestern US (including Southern California) continue to become warmer and drier."

A 2012 summary of climate change projections by various state agencies, led by CalEPA, stated the following with respect to precipitation forecasts:

"Several of the improved climate models shift toward drier conditions by the mid-to-late 21st Century in Central and, **most notably Southern California**. By mid-century, some climate models show that 30-year average precipitation in the San Diego region will decrease by more than 8 percent compared to historical totals, even under a lower emissions scenario.... Even in projections with relatively small or no declines in precipitation, **central and southern parts of the state can be expected to be drier from the warming effects alone** as the spring snowpack will melt sooner, and the moisture contained in soils will evaporate during long dry summers." Our Changing Climate 2012: Vulnerability & Adaptation to the Increasing Risks from Climate Change in California, p. 3.

As for temperature, in addition to the future projected increases in temperature noted above, the *historic* warming in California during the last century has been greater in the south. According to CalEPA's report "Indicators of Climate Change in California" released this month, "[t]he difference in warming trends between these northern and southern regions [with the south seeing greater rises in temperature than the north] was statistically significant and most pronounced in [maximum temperatures]" (pages 44-45).

3) "State data for 2005 shows that in that year deliveries from northern California (via the Delta) constituted 33% of the water used for agriculture, urban consumption and wetland management in the South Coast, Tulare Lake and San Joaquin hydrologic regions."

DWR's published state water balance data for 2005 indicates the following for SWP and federal water deliveries in the South Coast, San Joaquin and Tulare Lake regions:

South Coast = 1,575 thousand acre feet (taf)

San Joaquin = 1,547 taf

Tulare Lake = 4,152 taf

Total for these three regions = 7,274 taf.

The DWR data also reports the water used in these three regions for agricultural use, managed wetlands use, urban residential use, urban commercial use, urban industrial use, urban large landscape use and urban energy production. The total water used for these purposes in the three regions in 2005 is:

South Coast = 4,564 taf

San Joaquin = 7,212 taf
Tulare Lake = 10,082 taf

Total for these three regions = 21,858 taf.

Dividing the total SWP and federal water deliveries by the total agricultural and urban water usage = 33.3% ($7,274 / 21,838 = 0.333$). This means that in 2005, 33% of the agricultural and urban water needs of these three southern hydrologic regions were met by water pumped from the Delta.

The source for this data is on the DWR website, and is in Excel format. It can be accessed here:

www.waterplan.water.ca.gov/docs/technical/data/2005_data_entry_3-10-11final_byPA.xlsx.

This general figure is supported by a report released in 2008 on the strategy for the Delta. That report notes that in Water Year 2000, 30% of the South Coast's water came directly from the Delta, and 34% of Tulare Lake's water came directly from the Delta. Governor's Delta Vision Blue Ribbon Task Force, "Our Vision for the California Delta," p. 42.

4) "Notably the overwhelming majority – over 80% – of the water flowing into the Delta comes from the Sacramento River."

The USGS released a report in 2000 commenting on the state of the Delta. In that report the USGS noted that for the period 1980-1991, the Sacramento River contributed 76% of the Delta's total inflow. The San Joaquin contributed 15%. The remaining 9% was contributed by precipitation falling on the Delta itself (4%) and the contribution from "East side streams" (5%). Assuming that some of that precipitation and contributions from East side streams counts as part of the Sacramento hydrologic region, the total contribution from the Sacramento is roughly 80%.

USGS, "Delta Subsidence in California: The sinking heart of the State." FS-005-00, April 2000. Page 3. Available at: <http://pubs.usgs.gov/fs/2000/fs00500/pdf/fs00500.pdf>.

The 2009 Water Plan Update by DWR included a regional report that focused exclusively on the Delta, although it is not considered a hydrologic region onto itself. That report stated that the Sacramento contributed 81% of the Delta's water in 2000.

"In an average water year like 2000, the largest source of water [for the Delta] was the Sacramento River, which transported a little more than 21 million acre-feet into the Delta. Additional flows from the Yolo Bypass, San Joaquin River, and eastside tributaries such as the Mokelumne and Cosumnes rivers contributed just over 3.9 million acre-feet, with precipitation directly on the Delta adding about another 1 million acre-feet." California Water Plan Update 2009: Sacramento-San Joaquin River Delta Regional Report, p. D-14.